

REMARKS/ARGUMENTS

Applicant has carefully reviewed and considered the Office Action mailed on June 12, 2006, and the references cited therewith.

Claim 18 is amended; no claims are cancelled or added. Claims 1-54 are pending in this application.

§ 112 Rejection of the Claims

Claim 2 was rejected under 35 USC § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. Applicant respectfully traverses.

Applicant respectfully submits 35 USC 112, second paragraph is an objective requirement evaluated in the context of whether the claim is definite, i.e., whether the scope of the claim is clear to a hypothetical person possessing the ordinary level of skill in the pertinent art. (MPEP 2171). In addition, the applicants are their own lexicographers. They can define in the claims what they regard as their invention essentially in whatever terms they choose so long as any special meaning assigned to a term is clearly set forth in the specification. (MPEP 2173.01). Applicant respectfully submits that Applicant has defined the term "graphite-like" in the specification as "any molecular group having sp^2 hybridization that resembles a fragment of a graphite sheet." (Specification, page 8). In addition, the Applicant respectfully submits that graphite has a known molecular structure and known properties to enable one skilled in the art, using graphite as a standard, to know what substrates and/or subgroups are included by using the term "graphite-like" and the definition "any molecular group having sp^2 hybridization that resembles a fragment of a graphite sheet," thus apprising one skilled in the art of the scope of the invention.

In addition, although the term "graphite-like" is defined while in context of the molecules that have a tendency to self-align under certain circumstances, the definition of the term is not limited to applications only dealing with subgroups of

self-assembling molecules. Therefore, Applicant respectfully submits that the definition provided in the specification can apply to subgroups of self-assembling molecules as well as the substrate.

Definiteness of claim language must be analyzed, not in a vacuum, but in light of the content of the particular application disclosure, the teachings of the prior art, and the claim interpretation that would be given by one possessing the ordinary level of skill in the pertinent art at the time the invention was made. (MPEP 2173.02). Applicant respectfully submits that the term "graphite-like" as used in claim 2 is definite as read in light of the definition provided in the specification. For example, the Applicant's recitation of "graphite-like" as including "any molecular group having sp^2 hybridization that resembles a fragment of a graphite sheet" is understood by one of ordinary skill in the art. As such, Applicant respectfully requests reconsideration and withdrawal of the 35 USC 112, second paragraph rejection for claim 2.

Claim 18 was rejected under 35 USC § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. Applicant has amended claim 18 to more clearly recite the claimed subject matter.

Claims 1-22 were rejected under 35 USC 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP 2172.01. Regarding claim 1, the omitted step of contacting the aligning surface with the substrate. Applicant respectfully traverses.

Applicant respectfully submits, MPEP 2172.01 states, "A claim which omits matter disclosed to be essential to the invention as described in the specification or in other statements of record may be rejected under 35 USC 112, first paragraph, as not enabling. Such essential matter may include missing elements, steps or necessary structural cooperative relationships of elements described by the applicant(s) as necessary to practice the invention."

However, MPEP 2164.08(c) states,

A feature which is taught as critical in a specification and is not recited in the claims should result in a rejection of such claim under the enablement provision section of 35 USC 112. See *In re Mayhew*, 527 F.2d 1229, 1233, 188 USPQ 356, 358 (CCPA 1976). In determining whether an unclaimed feature is critical, the entire disclosure must be considered. Features which are merely preferred are not to be considered critical. *In re Goffe*, 542 F.2d 564, 567, 191 USPQ 429, 431 (CCPA 1976).

Applicant submits that the specification lists "contacting the aligning surface with the substrate" as an embodiment disclosed; however, it is not necessarily a critical feature. For example, in the specification, Applicant states,

This ordered array of molecules may then be used in two distinct ways. First, the surface of the aligning substrate that holds the self-assembled monolayers of organic molecules is treated with molecules or particles that preferentially interact with the head groups of the ordered array on the aligning substrate. These interacting molecules or particles may be delivered in the gas, liquid or solution phase. The molecules or particles are allowed to remain in contact with the self-assembled monolayers of organic molecules until a secondary array is created. In this way, an ordered array of molecules or particles with desired electrical, chemical or material properties can be created from molecules or particles that would not otherwise have assembled into a nanoscale array. Alternatively, the surface of the aligning substrate that contains the self-assembled monolayers of organic molecules is brought into direct contact with the target substrate. (Specification, page 6, lines 3-14).

Thus, Applicant respectfully submits that bringing the self-assembled monolayers of organic molecules into direct contact with the target substrate is one embodiment described in the specification, not a critical feature. As such, Applicant respectfully requests reconsideration and withdrawal of the 35 USC 112, second paragraph rejection of claim 1, as well as those claims that depend therefrom.

§ 102 Rejection of the Claims

Claims 1, 3-6, 8-10, 12-14, 16, and 23-28 were rejected under 35 USC § 102(b) as being anticipated by U.S. Patent No. 6,180,239 to Whitesides, et al. (hereinafter "Whitesides"). Applicant respectfully traverses the rejection as follows.

Applicant respectfully submits that Whitesides does not teach all the elements as recited in claims 1 and 23. For example, Whitesides does not appear to teach separating the aligning surface from the substrate, leaving patterns of the organic molecules on the substrate, as provided in claims 1 and 23. In the Office Action, it was asserted that, "Whitesides et al. teach a method creating a patterned feature on a substrate comprising: preparing a solution of organic molecules having self-assembling properties (27), applying the solution to an aligning surface (20), contacting the aligning surface with the substrate (30), and separating the aligning surface from the substrate, (Figure 1d) leaving patterns of the organic molecules on the substrate." (Page 3). However, Whitesides provides,

Prior to microprinting, stamping surface 26, typically the entire surface 22 of the stamp, is coated with a molecular species 27. Molecular species 27 terminates in a functional group selected to bind to a particular material, and to form an ordered self-assembled monolayer thereupon. In the embodiment illustrated in FIGS. 1a-f, species 27 terminates in a functional group selected to bind to a surface 28 of an article 30, and to form a self-assembled monolayer on surface 28. (Col. 7, lines 20-28).

To anticipate a claim, the reference must teach each element of the claim. Whitesides discloses a stamping surface 26 that can be coated with a molecular species 27 to form an ordered self-assembled layer thereupon, however, Whitesides does not appear to teach separating the aligning surface from the substrate, leaving patterns of the organic molecules on the substrate, as provided in claims 1 and 23. Instead, Whitesides appears to teach that the stamp 20 is maintained in contact with article 30 for a period of time sufficient to allow species 27 to spread over surface 28 to a desired extent, thus, the species 27 spreads from each portion of stamping surface 26 towards an adjacent portion. (Col. 8, lines 22-30). Therefore, Whitesides does not appear to teach separating the aligning surface from the substrate, leaving

patterns of the organic molecules on the substrate, as provided in claims 1 and 23, but rather the formation of a monolayer of species 27 on article 30.

Based on the forgoing, Applicant respectfully submits that Whitesides does contain each and every element and limitation of independent claims 1 and 23. As such, Applicant respectfully submits that Whitesides does not support a 102(b) rejection of claims 1 and 23. Applicant respectfully requests reconsideration and withdrawal of the 102(b) rejection for independent claims 1 and 23, as well as those claims which depend therefrom.

§103 Rejection of the Claims

Claims 11, 15, and 22 were rejected under 35 USC § 103(a) as being unpatentable over Whitesides, in view of U.S. Patent No. 6,562,398 to Braach-Maksvytis, et al. (hereinafter "Braach-Maksvytis"). Applicant respectfully traverses the rejection as follows.

Claims 11, 15, and 22 depend from independent claim 1, which is in condition for allowance for at least the reasons stated above. That is, Whitesides does not teach each and every element contained in Applicant's independent claim 1. Braach-Maksvytis does not cure the deficiencies of Whitesides. For example, Braach-Maksvytis does not describe, teach, or suggest, independently or in combination, separating the aligning surface from the substrate, leaving patterns of the organic molecules on the substrate, as provided in independent claim 1.

As such, Applicant respectfully submits that each and every element and limitation of independent claim 1 is not taught or suggested by Braach-Maksvytis and Whitesides, either individually or in combination. Accordingly, Applicant respectfully requests reconsideration and withdrawal of the § 103(a) rejection of dependent claims 11, 15, and 22.

Claims 17-19 were rejected under 35 USC § 103(a) as being unpatentable over Whitesides, in view of U.S. Patent No. 5,578,351 to Shashidhar, et al. (hereinafter "Shashidhar"). Applicant respectfully traverses the rejection as follows.

Claims 17-19 depend from independent claim 1, which is in condition for allowance for at least the reasons stated above. That is, Whitesides does not teach each and every element contained in Applicant's independent claim 1. Shashidhar does not cure the deficiencies of Whitesides. For example, Shashidhar does not describe, teach, or suggest, independently or in combination, separating the aligning surface from the substrate, leaving patterns of the organic molecules on the substrate, as provided in independent claim 1.

As such, Applicant respectfully submits that each and every element and limitation of independent claim 1 is not provided, taught or suggested by Shashidhar and Whitesides, either individually or in combination. Accordingly, Applicant respectfully requests reconsideration and withdrawal of the § 103(a) rejection of dependent claims 17-19.

Claims 21 and 29 were rejected under 35 USC § 103(a) as being unpatentable over Whitesides, in view of U.S. Patent No. 6,465,054 to Effenberger (hereinafter "Effenberger"). Applicant respectfully traverses the rejection as follows.

Claims 21 and 29 depend from independent claims 1 and 23, respectfully, which are in condition for allowance for at least the reasons stated above. That is, Whitesides does not teach each and every element contained in Applicant's independent claims 1 and 23. Effenberger does not cure the deficiencies of Whitesides. For example, Effenberger does not describe, teach, or suggest, independently or in combination, separating the aligning surface from the substrate, leaving patterns of the organic molecules on the substrate, as provided in independent claims 1 and 23.

As such, Applicant respectfully submits that each and every element and limitation of independent claims 1 and 23 are not provided, taught or suggested by Effenberger and Whitesides, either individually or in combination. Accordingly, Applicant respectfully requests reconsideration and withdrawal of the § 103(a) rejection of dependent claims 21 and 29.

Allowable Subject Matter

Applicant thanks the Examiner for identifying that Claim 7 will be allowable if rewritten to overcome the rejection(s) under 35 USC 112, second paragraph, set forth in the Office Action and all of the limitations of the base claim and any intervening claims. Applicant believes the above remarks in connection with claim 1 have overcome the 112 rejection for the same and, hence, respectfully requests reconsideration and allowance of claim 7.

CONCLUSION

Applicant respectfully submits that the claims are in condition for allowance and notification to that effect is earnestly requested. The Examiner is invited to telephone Applicant's attorney Gregg Wisdom at (360) 212-8052 to facilitate prosecution of this matter.

At any time during the pendency of this application, please charge any additional fees or credit overpayment to the Deposit Account No. 08-2025.

CERTIFICATE UNDER 37 CFR §1.8: The undersigned hereby certifies that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail, in an envelope addressed to: **MS AMENDMENT** Commissioner for Patents, P.O. BOX 1450 Alexandria, VA 22313-1450, on this 3rd day of October, 2006.

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